

## **REMARKS**

Claims 1 and 3-10 are pending. No claim amendments are made herein.

**Claims 1 & 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kihara et al.(6,627,671) in view of GB-1,204,230.** (Office Action, page 2)

Applicants respectfully traverse the Examiner's rejection under 35 USC §103(a). The previously presented claims 1 and 3-10 are patentable over Kihara even in view of GB-'230 as will be shown by the unexpected results explained below.

### **1. The Claimed Invention**

The claimed invention is to provide a polyol composition for a two-component curable abrasive foam, which includes the specific polyol (B) (which has been previously limited by incorporating original-filed claim 2 to claim 1) and a polyaminochlorophenylmethane mixture (A) includes the following compounds: 50 to 70% by weight of a binuclear polyaminochlorophenylmethane compound; 20 to 40% by weight of a trinuclear polyaminochlorophenylmethane compound; and 5 to 10% by weight of a tetranuclear or higher polyaminochlorophenylmethane compound, wherein the polyaminochlorophenylmethane mixture (A) is uniformly dissolved in the polyol (B), and

the weight ratio of (A) to (B) ((A)/(B)) stands at 40/60 to 60/40. The polyol composition exhibits excellent miscibility and dissolution stability, and is liquid. As a result, the polyol composition "enables molding of a foamed article for abrasive in a simple two-component mixing casting machine."

The claimed invention relates to polyaminochlorophenylmethane mixture (A) which has lower purity and has the specific content is dissolved in the polyol (B). Dissolving the polyaminochlorophenylmethane mixture (A) in the polyol (B) is a significant effect of the claimed invention.

The necessary conditions (1) and (2), in order to take the above-mentioned effect, are shown as follows:

(1) The polyaminochlorophenylmethane mixture (A) includes 50 to 70% by weight of a binuclear compound; 20 to 40% by weight of a trinuclear compound; and 5 to 10% by weight of a tetranuclear or higher compound.

Although GB-'230 discloses the addition ratio of starting materials at left column, lines 50 to 65 of page 1, GB-'230 does not disclose the ratio of products. GB-'230 does not disclose the polyaminochlorophenylmethane mixture (A) with the specific ratio of contents, recited in claim 1 of the present application.

In addition, the binuclear polyaminochlorophenylmethane compound is usually produced in a high purity state (For example, Comparative Examples 2 and 3).

The polyaminochlorophenylmethane mixture (A) with the specific ratio of contents, recited in claim 1 of the present application is a novel material, therefore, it is not necessary to additionally show criticality of the combination of polyaminochlorophenylmethane mixture (A).

In addition, neither Kihara nor GB-'230 disclose dissolving the polyaminochlorophenylmethane mixture (A) in the polyol (B).

Further, there is no mixture that includes a different ratio of a binuclear compound, a trinuclear compound and a tetranuclear or higher compound from the polyaminochlorophenylmethane mixture (A) recited in claim 1.

It is the Applicants' position that the significance of the critical range of the polyaminochlorophenylmethane mixture (A) has been proved by the Comparative Examples 1 to 3.

(2) Regarding to the Ratio of (A) and (B)

The additional example data is shown in following Table A below.

Table A:

|                       | Composition of (A) Poly-aminochlorophenylmethane compound                                | (B) Polyol    | Elapsed Time | Content of (A) (% by weight) |     |     |     |     |
|-----------------------|--|---------------|--------------|------------------------------|-----|-----|-----|-----|
|                       |  |               |              | 30%                          | 40% | 50% | 60% | 70% |
| Example 1             | binuclear compound 65%<br>trinuclear compound 28%<br>tetranuclear compound 7%            | PTMG 1000     | 1 day        | A                            | A   | A   | A   | A   |
|                       |  |               | 1 week       | A                            | A   | A   | A   | A   |
|                       |  |               | 3 months     | A                            | A   | A   | A   | C   |
|                       |  |               | 6 months     | A                            | A   | A   | A-B | C   |
| Comparative Example 1 | binuclear compound 82%<br>trinuclear compound 15%<br>Tetranuclear compound 3%            | PTMG 1000     | 1 day        | A                            | A   | B   | C   | C   |
|                       |  |               | 1 week       | A                            | A   | B   | C   | C   |
|                       |  |               | 3 months     | A                            | C   | C   | C   | C   |
|                       |  |               | 6 months     | A-B                          | C   | C   | C   | C   |
| Comparative Example 2 | MBOCA as binuclear compound 98%<<br>trinuclear compound 1%><br>Tetranuclear compound 1%> | PTMG 1000     | 1 day        | A                            | A   | C   | C   | C   |
|                       |  |               | 1 week       | A                            | A   | C   | C   | C   |
|                       |  |               | 3 months     | A                            | C   | C   | C   | C   |
|                       |  |               | 6 months     | A-B                          | C   | C   | C   | C   |
| Example 2             | binuclear compound 65%<br>trinuclear compound 28%<br>Tetranuclear compound 7%            | PTMG 1000 DEG | 1 day        | A                            | A   | A   | A   | A   |
|                       |  |               | 1 week       | A                            | A   | A   | A   | A   |
|                       |  |               | 3 months     | A                            | A   | A   | A   | C   |
|                       |  |               | 6 months     | A                            | A   | A   | A-B | C   |
| Comparative Example 3 | MBOCA as binuclear compound 98%<<br>trinuclear compound 1%><br>tetranuclear compound 1%> | PTMG 1000 DEG | 1 day        | A                            | A   | B   | C   | C   |
|                       |  |               | 1 week       | A                            | A   | B   | C   | C   |
|                       |  |               | 3 months     | A                            | C   | C   | C   | C   |
|                       |  |               | 6 months     | A-B                          | C   | C   | C   | C   |

(Criteria) A: transparent, pale brown solution; B: hazy; C: precipitates such as MBOCA

The data of the ratio (A)/(B)=30/70 is added in the right column. The significance of the critical range of the ratio of (A) / (B) has been proved by the added data shown in Table A.

## 2. Regarding the unexpected effect of the present invention

The unexpected effect of the claimed invention is dissolving the polyaminochlorophenylmethane having lower purity and the specific contents in the specific polyol (B). Regarding the unexpected effect, following Figures 1-3 below show the changes:

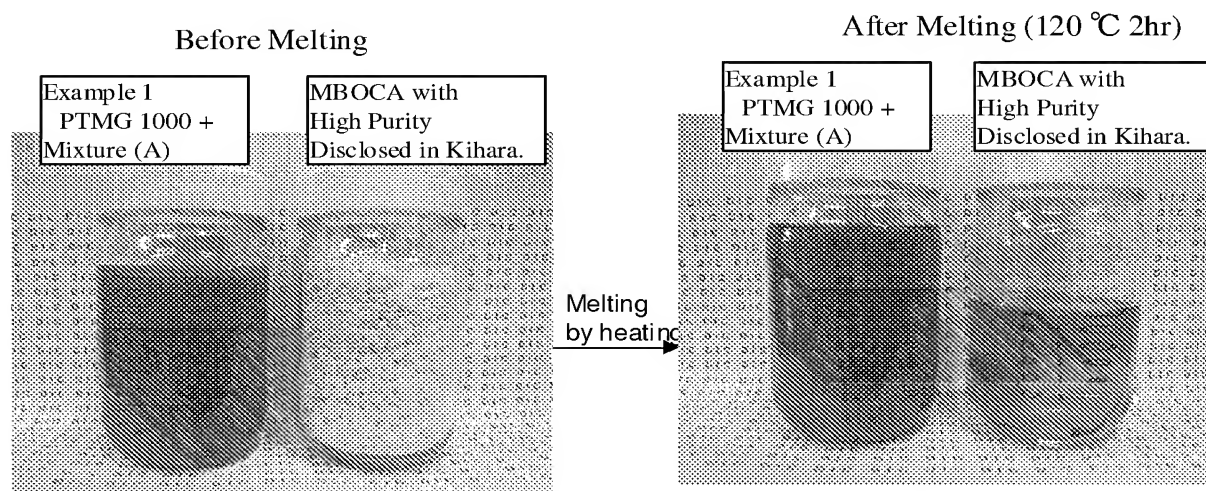


Figure 1

Figure 2

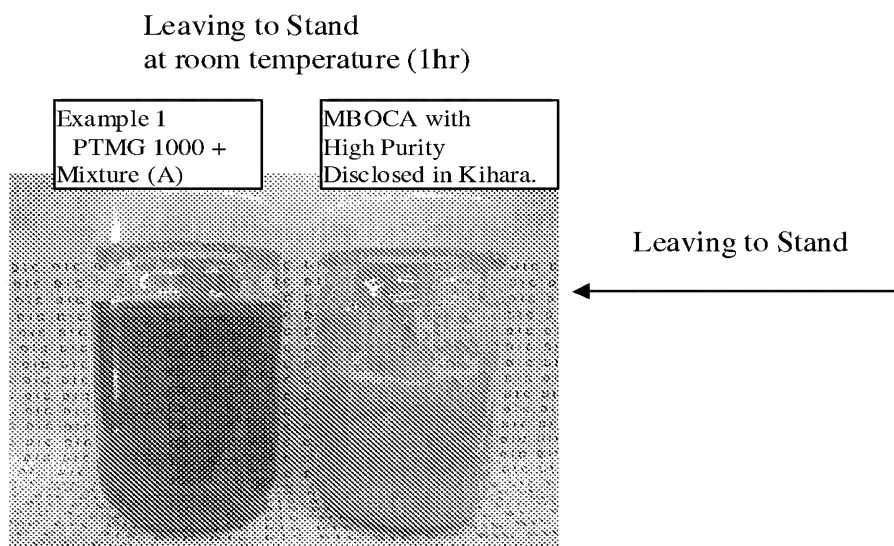


Figure 3

High purity MBOCA disclosed in Kihara is melted at the high temperature of 120°C, and is liquid at 120°C. However, it becomes solid after leaving it to stand at room temperature.

In the Table 1 of the specification of the present application, or above Table A, "A" is the state of transparent, pale brown solution, as shown in left side of the above Figure 3.

Figures 1 to 3 above clearly show the unexpected effect of the claimed invention. It is respectfully requested that this evidence be considered and the rejection be reconsidered and withdrawn.

In view of the above evidence, applicant believes the pending application is in condition for allowance.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

Dated: December 3, 2010

Customer No. 21874

Respectfully submitted,

Electronic signature: /James E. Armstrong, IV/  
James E. Armstrong, IV  
Registration No.: 42,266  
EDWARDS ANGELL PALMER & DODGE  
LLP  
P.O. Box 55874  
Boston, Massachusetts 02205  
(202) 478-7375  
Attorneys/Agents For Applicant